

Comment Response – Draft Corrective Measures Study-Feasibility Study

Detailed Analysis of Alternatives Technical Memorandum - September 20, 2005

EPA Comments; State Attorney General's Office comments submitted by telephone by Dan Miller to Carol Deck; and CDPHE comments

Number	Comment From	Comment	Response
General Comment 1	EPA	Reduction of Toxicity, Mobility and Volume through Treatment are distinctly different processes and actions should be presented separately.	The discussion has been modified to treat the reduction of toxicity, mobility and volume through treatment as different processes. The actions are presented separately.
General Comment 2	EPA	Please note that both the Comprehensive Risk Assessment (CRA) and the Present and the Original landfill documents (i.e. Closeout and Maintenance and Monitoring Reports) are currently in regulatory review and conclusions may be subject to change.	Comment noted.
General Comment 3	EPA	Please remove all references to groundwater treatment systems "operating properly and successfully" throughout the text and tables.	References to groundwater treatment systems "operating properly and successfully" have been changed to indicate operating as designed..
Specific Comment 1	EPA	Page 7, Section 3.1.2, Number 3. Please revise the sentence regarding prohibition of pumping groundwater to include "... where the remedy may be impacted."	The sentence has been revised as follows: Prohibition on the use of contaminated surface water, groundwater and/or pumping groundwater where the remedy may be impacted.
Specific Comment 2	EPA	Page 7, Section 3.1.2, Number 4. The statement "No excavation is allowed at the Present and the Original Landfill." should be listed as a separate institutional control from the more general restrictions on subsurface excavation.	The prohibition of excavation at the Present and Original Landfills has been listed as a separate institutional control.
Specific Comment 3	EPA	Page 10, Section 3.3.1, Number 6. Please revise the first sentence to read as follows "Groundwater actions are performing as designed by removing contamination in captured groundwater to meet appropriate surface water quality standards." In addition, the final sentence regarding water quality protection should also include groundwater quality protection.	The first sentence has been revised as follows: Groundwater actions are operating as designed to remove contamination in captured groundwater to meet appropriate surface water standards at surface water POCs. The last sentence has been revised as follows: The passive groundwater collection and treatment systems will continue to operate and be monitored to protect groundwater and surface water quality.
Specific Comment 4	EPA	Page 11, Section 3.3.2, Number 2. The sentence "At sentinel wells ... the RI conclude that based on the environmental conditions and type of residual contamination, no further action can be taken." Please revise the conclusion "... no further action can be taken" to state "... no additional feasible action can be taken."	The sentence has been revised as follows: At sentinel wells where groundwater data are above the groundwater quality standards, results of the RI conclude that, based on environmental conditions and type of residual contamination, no additional

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			feasible action can be taken.
Specific Comment 5	EPA	Page 13, Section 3.3.4, Number 2. Please remove the second sentence "Groundwater plume treatment systems have been implemented and remove contaminant loading to surface water." This issue is addressed on page 14, number 5.	The sentence has been removed.
Specific Comment 6	EPA	Page 14, Section 3.3.5, Numbers 1, 2, and 3. Please remove all three bullets.	The bullets have been removed.
Specific Comment 7	EPA	Page 16, Section 3.4.4. Please remove the sentence "In addition, TMV will be reduced by institutional controls. . ."	The sentence has been removed.
Specific Comment 8	EPA	Page 18, Section 3.5. Please remove redundant "that have".	The redundant "that have" has been removed.
Specific Comment 9	EPA	Page 18, Section 3.5.2. Please add a sentence indicating that potential air impacts will be mitigated.	The following sentence has been added: Any potential air impacts will be mitigated during implementation of the remedy.
Specific Comment 10	EPA	Page 20, Section 4.1.1. The last sentence on this page "In conclusion for this criterion, Alternative 2 . . ." should be removed.	The sentence was removed.
Specific Comment 11	EPA	Page 21, Section 4.1.2. In the first sentence, please delete "however, . . . the lowest cost."	This portion of the sentence was removed.
Specific Comment 12	EPA	Page 22, Section 4.1.5. In the second sentence, please change "high risks" to "increased risks". In addition, please revise the final sentence to read as follows ". . . Alternatives 1 and 2 provide the most short-term effectiveness."	The phrase "high risks" was changed to "increased risks." The final sentence was revised as follows: In conclusion for this criterion, Alternatives 1 and 2 provide the most short-term effectiveness.
General Comment 1	State of Colorado Attorney General's Office	In general, the substance and conclusions of the Tech Memo are acceptable, and Mr. Miller may have additional comments when the draft RI/FS is issued.	Comment noted.
Specific Comment 1	State of Colorado Attorney General's Office	Page 7, first paragraph after numbered list: Change paragraph to reflect that some institutional controls may be necessary even if groundwater contamination is below MCLs or indoor air volatilization PRGs can be met.	The sentence has been revised as follows: In the future, groundwater monitoring may indicate that some of these institutional controls may no longer be necessary if residual groundwater contamination is below MCLs or the indoor air volatilization PRGs can be met. The need for institutional controls will be evaluated as part of

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			future CERCLA periodic reviews.
Specific Comment 2	State of Colorado Attorney General's Office	Page 11, first full sentence: Sentence is not needed because ARARs are already met.	The sentence has been kept, including EPA's comment to change last phrase from "no further action can be taken" to "all feasible actions have been taken."
Specific Comment 3	State of Colorado Attorney General's Office	Page 11, references to federal laws and regulations: Add references to the equivalent Colorado laws and regulations.	Changes made.
Specific Comment 4	State of Colorado Attorney General's Office	Page 13, first full paragraph: Change "borrowing" to "burrowing."	Change made.
Specific Comment 5	State of Colorado Attorney General's Office	Page 17, section 3.4.6: Replace "legally enforceable deed restrictions" with "an environmental covenant."	The sentence has been revised as follows: Alternative 2 is easily implemented by a combination of administrative and physical controls, which are expected to include institutional controls, an environmental covenant, and limited construction work to install signage.
Specific Comment 6	State of Colorado Attorney General's Office	Page 22, section 4.1.6, conclusion: Change last sentence to "In conclusion for this criterion, Alternatives 1 and 2 are both easily implementable."	This change was not made, but can be made for the final RI/FS Report.
Additional Comment	State of Colorado Attorney General's Office	Alternative 1 is the no further action alternative, with monitoring. Because an environmental covenant would be considered part of a response action, it should not be included in the no further action alternative. Without the covenant, Alternative 1 would not comply with the State environmental covenant law ARAR. Alternative 1 would include the environmental covenant for the Present Landfill, but not other areas of the site.	Change not made. The RFCA Parties will further discuss this comment during the review period.
Specific Comment 1	CDPHE	Section 3.1.1 The text should mention that inclusion of this No Further Action alternative is a CERCLA requirement.	Section 10.3 states that a detailed analysis of three alternatives will be evaluated against the nine CERCLA criteria (40 CFR 300.430(e)(9)). This includes the NCP requirement to include a no

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			further action alternative. The text could be revised for the final RI/FS to specifically include a statement that the no further action alternative is a CERCLA requirement. Alternatively, the Proposed Plan could make a similar statement.
Specific Comment 2	CDPHE	<p>Sections 3.1.2 and 3.4.1</p> <p>The 5 institutional controls listed in these 2 sections should be modified to include the institutional controls agreed to in the IM/IRAs for the Present Landfill and the Original Landfill. The following modifications are proposed:</p> <ol style="list-style-type: none"> 2. Prohibition on drilling wells into contaminated groundwater or at the landfills for drinking water or irrigation use. [IC #3 seems redundant with the intent of IC#2 and could be eliminated.] 4. Restrictions on excavation in areas above subsurface contamination or intrusion into subsurface contamination. No excavation is allowed on or in the immediate vicinity of the Present Landfill and the Original Landfill. <p>The following additional institutional/physical controls are proposed to make this list agree with the landfill IM/IRAs:</p> <ul style="list-style-type: none"> • Prohibition on disruption of groundwater or leachate collection and treatment systems. • Prohibition on roads and trails on landfill covers or in the immediate vicinity of the covers. • Fencing may be installed around the landfills covers to limit the potential for damage or tampering. <p>Since these are lists of institutional <u>and</u> physical controls, the last sentence in Section 3.4.1 could be modified per the landfill IM/IRAs and included in the numbered list:</p> <ul style="list-style-type: none"> • Signage will also be installed as a physical control along the perimeter of the IA OU to notify the WRW and WRV that they are at the boundary of the Refuge maintained by the USF&WS; to indicate that vehicles are prohibited from specific areas; to delineate landfill boundaries; to outline digging, fishing, swimming, groundwater, surface use and access restrictions; and to mark monitoring locations 	<p>The proposed modifications were not made for the draft RI/FS Report. The RFCA Parties may continue to refine the proposed institutional controls and/or physical controls during the review period.</p>

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		for landfill covers.	
Specific Comment 3	CDPHE	Section 3.3.1 Item #1 mentions only the risk from Pu in the Wind Blown EU. As mentioned in Section 2.1 and footnote #3, three other contaminants with risks above 1×10^{-6} were also identified in the CRA. This statement needs to be caveated.	Section 8 of the draft RI/FS Report discusses the results of the RI, including the CRA, and identifies what areas of the site need to be evaluated in the FS. If additional clarification is needed after reviewing the draft RI/FS Report, then clarifications can be made for the final RI/FS Report.
Specific Comment 4	CDPHE	Section 3.3.2 - Item #3 Should the effluent at the 3 groundwater treatment systems also meet the substantive NPDES requirements?	This change was not made in the draft RI/FS Report, but could be made in the final RI/FS Report.
Specific Comment 5	CDPHE	Section 3.3.3 – Item #2 The next to last sentence should be qualified: “But, excavations below three feet are not likely under a WRW scenario	This change was not made in the draft RI/FS Report, but could be made in the final RI/FS Report.
Specific Comment 6	CDPHE	Section 3.3.3 – Item #3 “Plutonium” is misspelled in the first sentence.	This change will be made in the final RI/FS Report.
Specific Comment 7	CDPHE	Section 3.3.3 – Item #4 The term, “discharge points”, in the first element should be explained/clarified. If this refers to discharge of groundwater to surface water, another term should be used. The only “source area enhancements” I am aware of is the application of HRC. This could be made less cryptic by mentioning HRC by name or by using a term like, “VOC source area degradation enhancements.”	The term “discharge points” does refer to discharge from groundwater to surface water. Item #4, (1) could be rephrased to read: many sources will not impact groundwater above surface water standards in areas where groundwater discharges to surface water Regarding enhancements, in addition to the HRC, other enhancements implemented include plantings to enhance phytoremediation (downgradient from the Solar Ponds and East Trenches Plume Treatment Systems). Item #4, (3) could be rephrased to read: groundwater plume treatment systems and enhancements have been implemented in selected areas. Enhancements include: a) plantings of willows and cottonwoods to facilitate phytoremediation, and b) insertion of amendments below grade level to enhance in-situ biodegradation. These changes were not made in the draft RI/FS

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Specific Comment 8	CDPHE	<p><u>Section 3.3.4</u> The only items that deal with treatment are #2, the last sentence in #3, and #5 (which could include #6).</p>	<p>Report, but could be made in the final RI/FS Report.</p> <p>The language has been revised as follows: Alternative 1 exhibits a high degree of reduction of toxicity, mobility, and volume for the following reasons:</p> <ol style="list-style-type: none"> 1. The three passive groundwater treatment systems provide for a reduction of VOCs or uranium and nitrate reducing the overall volume of contaminants in the groundwater and protecting the adjacent surface water. 2. The Present Landfill closure, as approved by the regulatory agencies, includes a multilayered cover consisting of geosynthetic materials that stop the infiltration of water from the surface of the landfill into the waste. In addition, a groundwater intercept system consisting of an exterior groundwater collection system and slurry wall containment was installed to reduce the flow of groundwater into the landfill. The geosynthetic layers of the cover are protected by native soil both under and on top of the geosynthetics, and the cover is further protected from borrowing animals by an additional rock layer above the geosynthetics to retain the cover's impermeable characteristics. The entire landfill area is then covered with 2 feet of vegetated native soil for additional protection of the cover layers below. This cover, along with the groundwater intercept system, greatly reduces the possibility of contaminants moving from the landfill. The landfill seep treatment system provides treatment to remove the VOC contamination from the landfill seep. 3. Experience and knowledge gained during accelerated actions have shown that it is not

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			<p>technically feasible to reduce toxicity, mobility, and volume of residual plutonium in surface soil through treatment.</p> <p>In addition, all of the RFCA accelerated actions (except the landfills) included removal of contaminated structures and environmental media. Removal provides the highest level of reduction of toxicity, mobility, and volume. Where subsurface removal was not conducted, the contaminated material or media is fixed and/or not considered mobile in the environment.</p>
Specific Comment 9	CDPHE	<p><u>Section 3.4.4</u> The second sentence does not address the reduction of TMV through treatment.</p>	The language has been deleted and replaced with the following: See Alternative 1.
Specific Comment 10	CDPHE	<p><u>Sections 3.3.8, 3.3.9, 3.4.8, 3.4.9, 3.5.8, 3.5.9, 4.1.8, 4.1.9</u> Explain how and when the text for the State Acceptance and Community Acceptance sections will be created.</p>	Section 3.0 includes the following statement: State and Community acceptance will be addressed in the CAD/ROD once comments on the Proposed Plan have been received. Under each subsection specified in the comment, the term “reserved” has been deleted and replaced with the following sentence: Discussion of this criterion will be provided in the CAD/ROD.
Specific Comment 11	CDPHE	<p><u>Section 4.1.1</u> The first bullet should be qualified: “...protective of human health since the risk to <u>anticipated future users</u> falls within...”</p>	This change was not made in the draft RI/FS Report, but could be made in the final RI/FS Report.
Specific Comment 12	CDPHE	<p><u>Section 4.1.2</u> In the first sentence of the third paragraph, change “Alternative 2” to “Alternatives 2 and 3.”</p>	The first sentence of the third paragraph of section 4.1.2 is: Alternatives 2 and 3 meet soil RAO 3 and groundwater RAO 3.
Specific Comment 13	CDPHE	<p><u>Section 4.1.4</u> Several of the elements mentioned in the first paragraph do not directly result in reduction of TMV or they have nothing to do with treatment.</p>	<p>The text has been changed as follows: Alternative 1 accounts for a high degree of reduction in toxicity, mobility, and volume through treatment of the Present Landfill seep and groundwater by passive treatment systems. Alternative 3 reduces the surface soil with residual contamination by removal.</p> <p>In conclusion for this criterion, Alternative 1</p>

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			provides for a cost-effective and protective solution.
Specific Comment 14	CDPHE	<u>Figures 2.1 – 2.4</u> The text does not explain the exceedances outside of the outline of the DOE-retained area.	Reconfiguring the OUs is proposed in Section 9.0 of the draft RI/FS Report. Table 9.3 describes each exceedance in the reconfigured BZ OU.